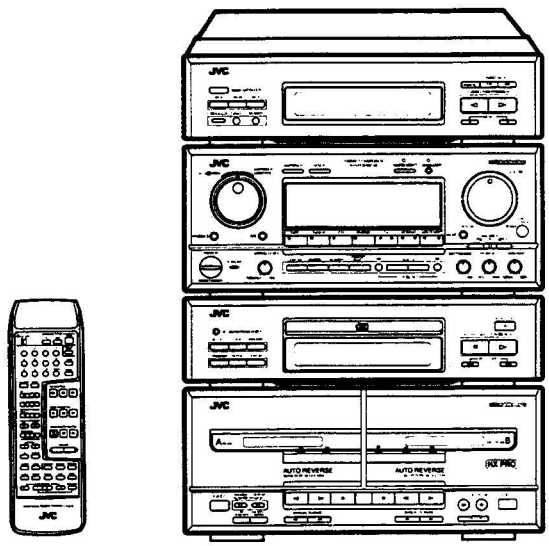
JVC

COMPACT COMPONENT SYSTEM

DX-MX90BK



COMPACT disc DIGITAL AUDIO

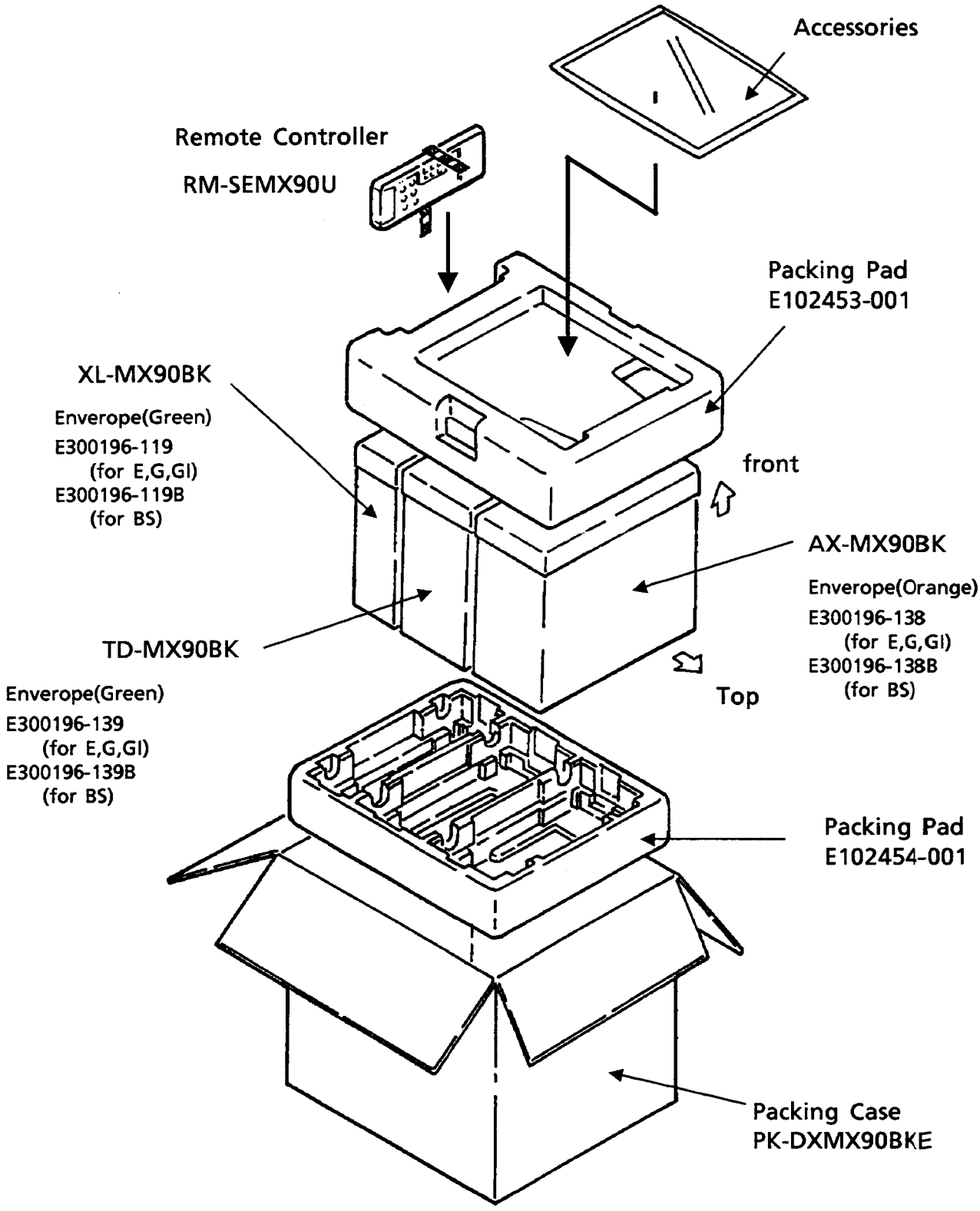
Component

Compact component system (DX-MX90BK) is a unit composing of the following units.

Model No.	Unit No.	Service manual No.
DX-MX90BK	AX-MX90BK(Amplifier)	20269
	TD-MX90BK (Tape Deck)	20270
	FX-MX90BK (Tuner)	20271
	XL-MX90BK (CD player)	20272

June 1991

■ Packing Materials and Part Numbers

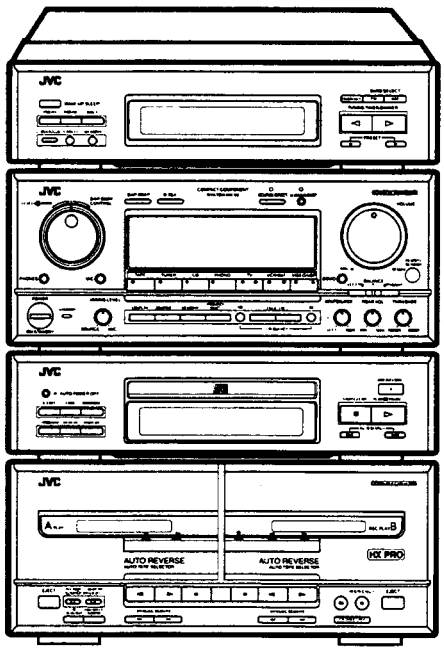


■ Accessories List

⚠	Part Number	Part Name	qt.	Description	Areas
	E305805-1765A E305805-1765ABS E305805-1766A	Instruction Book Instruction Book Instruction Book	1 1 1		E,G BS GI
	QPGA025-03505B QPGA025-03505	Envelope Envelope	1 1	for Instruction Book for Instruction Book	BS E,G,GI
	EWP502-005K E67007-001	Built in Antenna Wire Antenna	1 1		BS,E,G,GI G
	RM-SEMX90U	Remote Controller	1		BS,E,G,GI
	UM-4NJ-2P	Battery	2	for Remote Controller	BS,E,G,GI
	BT-20060 BT-20117	Warranty Card Warranty Card	1 1		BS G
	BT20066A	EC Service Network	1		BS
	E43486-340A	Safety Instruction Sheet	1		BS
	QZL1008-001	FTZ Information Sheet	1		G
	EMZ2001-011	FM Antenna Adaptor	1		BS,E,GI
	EWP101-006	Speaker Cord Assembly	2		BS,E,G,GI
	EQB4001-015	AM Loop Antenna	1		BS,E,G,GI
	E43486-451	Caution Label	1		BS,E,G,GI

The marks for designated areas

BS --- the U.K.
E --- Continental Europe
G --- Germany
GI --- Italy



This system produces a full, powerful bass sound.

- **With JVC's newly developed forced air cooling system, Compact component system can produce the same high-quality bass sound as a large stereo system.**

Thank you for purchasing this JVC Compact Component Stereo System. We hope it will be valued addition to your home, giving you years of enjoyment.

Be sure to read this instruction manual carefully before operating your new stereo system. Here you will find all the information you need to set up and use the system.

For questions that cannot be answered in this manual, please contact your dealer.

About This manual

This instruction manual will help you with the following:

- Connecting the components of the system, installing the antennas, and connecting other components such as a turntable or VCR to the system.
- Learning the operations of the components of the system (Amplifier, CD Player. Tape Deck, Tuner and the Remote Controller).
- Learning additional functions of the system, such as using the timers, using the D. SEA parametric equalizer, DSEP (digital special effects processor), presetting broadcast stations in memory, and using the various recording capabilities.
- trouble-shooting, if a problem should occur.

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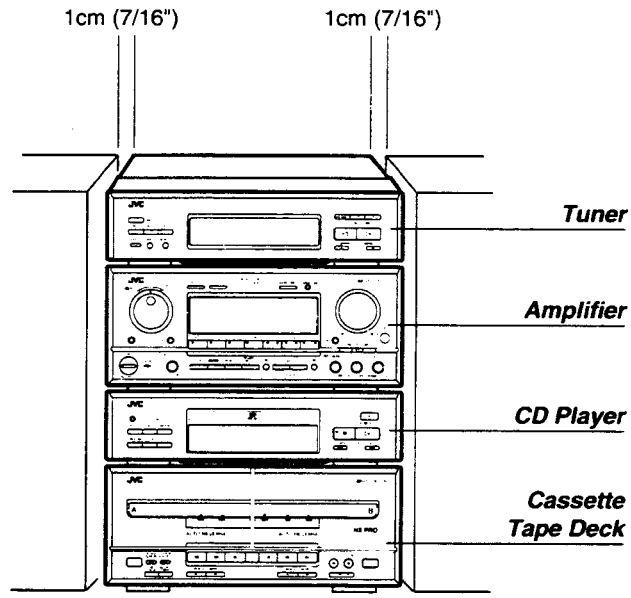
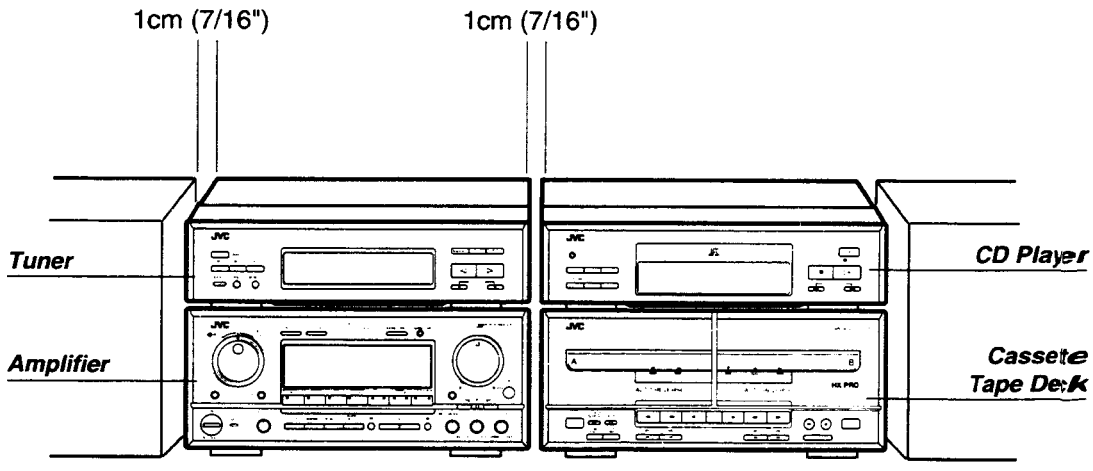
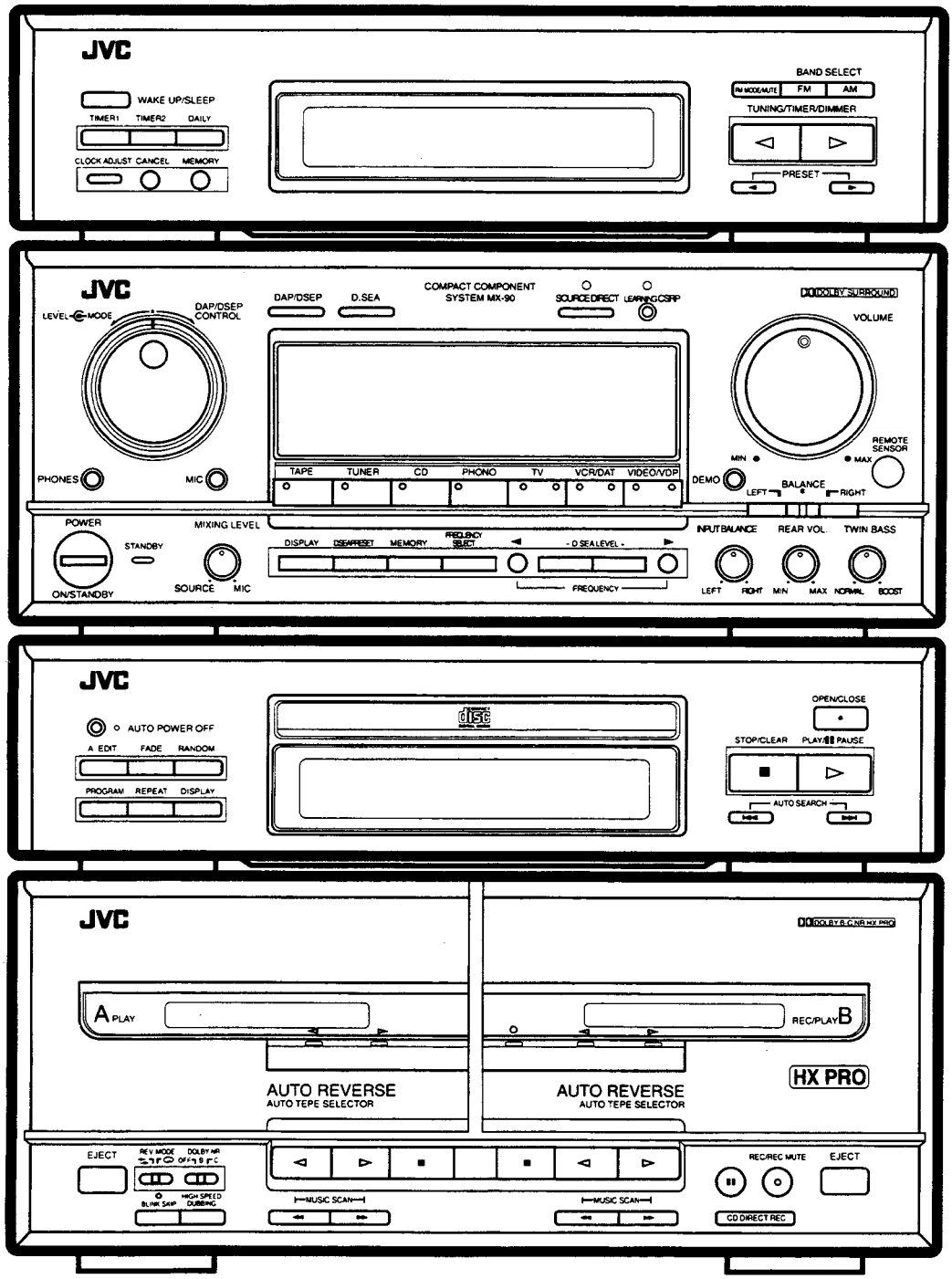
Laying Out the System

There are two ways to lay out the system as shown below.

- Leave a space of at least one cm on both sides of the amplifier and keep the back at least 10 cm from the wall for ventilation.







Tuner

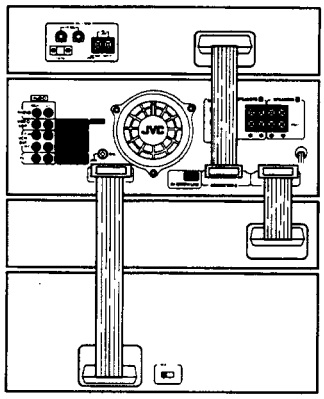
Amplifier

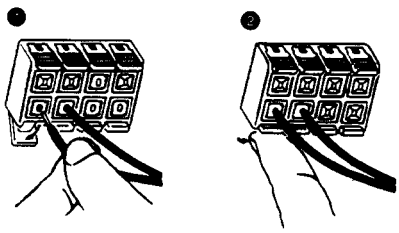
CD Player

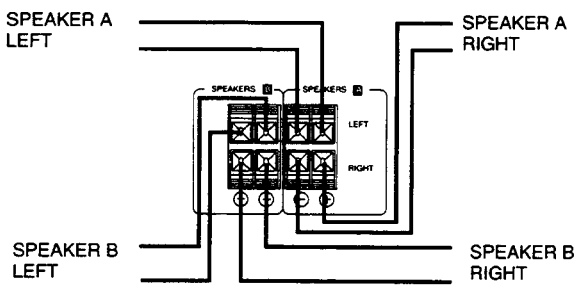
Cassette Tape Deck

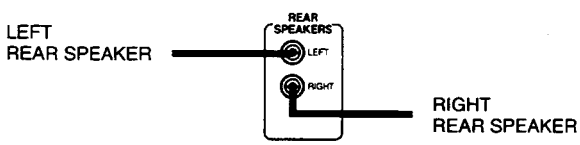
Getting started

Connecting the System Components









Connection Notes

- Before you plug in the system, you must make all the necessary connections.

Connecting the Four stereo Components

- Connecting the Tuner, Amplifier, CD Player, and Tape Deck.

Connect three ribbon cables extending from the tuner, CD player, and tape deck to the amplifier.

- If the system does not work well or needs repairing, please take all the components with you the nearest agent.

Connecting the Speakers

Speaker Terminals
❶ When connecting speakers, open each terminal and insert the end of the speaker wire as shown.
❷ Close the terminals as shown to clamp the speaker wires in place.

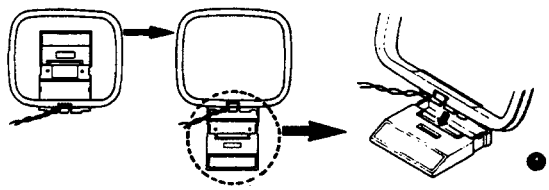
SPEAKERS A
Connect the High Range Speakers to the SPEAKERS A terminals on the amplifier.

SPEAKERS B
Connect the Subwoofers to the SPEAKERS B terminals on the amplifier.

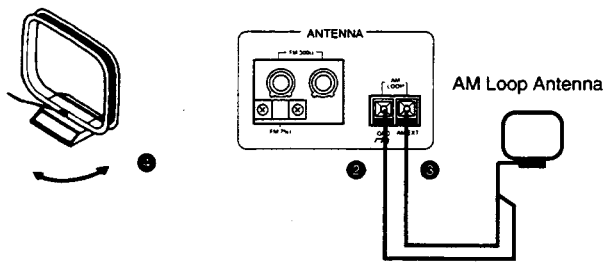
REAR SPEAKERS
Connect the REAR SPEAKERS terminals of the amplifier to the rear speakers.

Note:
- Connect speaker cables to terminals matching cable colos with terminal lever colors.

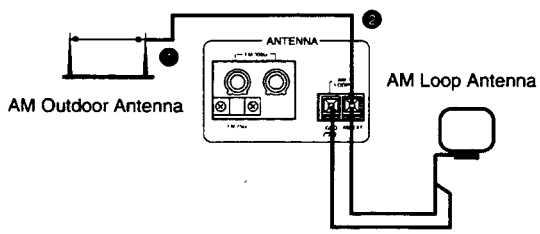
AM and FM Antenna Connections



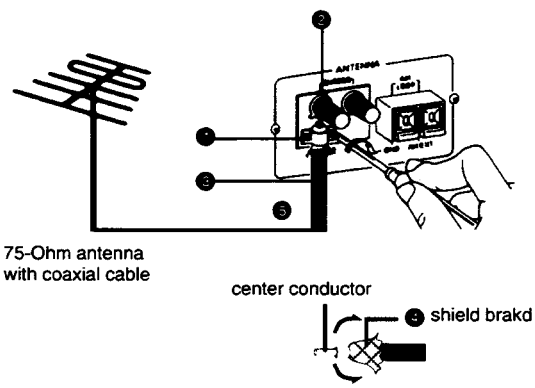
To receive radio broadcasts, you will have to connect AM and FM antennas to the Tuner.
An AM loop antenna is included with your system.
FM antennas use two type of cable connections: 75-ohm cables have a round coaxial connection while 300-ohm cables have a flat connection.



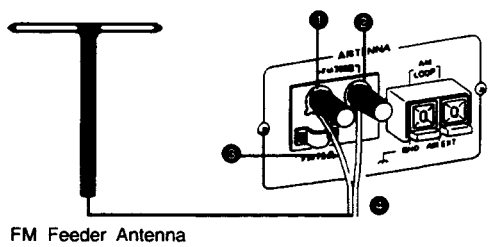
AM Loop Antenna
1. Fold out the loop from the antenna base.
2. Connect one antenna wire to one of the AM LOOP terminals.
3. Connect the remaining antenna wire to the other AM LOOP terminal.
   Note:
   - These two terminals open and close the same way as the speaker terminals.
4. Adjust the loop antenna as needed to get the best reception.



AM Outdoor Antenna
If your AM broadcast reception is unsatisfactory, you should connect an AM outdoor antenna in addition to the loop antenna.
Important! The AM loop antenna must be installed to receive AM broadcasts. Do not disconnect the loop antenna when installing an outdoor antenna.
1. Install a single vinyl-covered antenna wire outdoors. The antenna wire should be about 16 to 40 feet (5 to 12 meters) long.
2. Connect one end of the antenna to the AM loop terminal marked AM EXT.
   Note:
   - Except for the connection, make sure no uninsulated antenna wire touches the rear panel. Otherwise, you might not receive AM broadcasts.



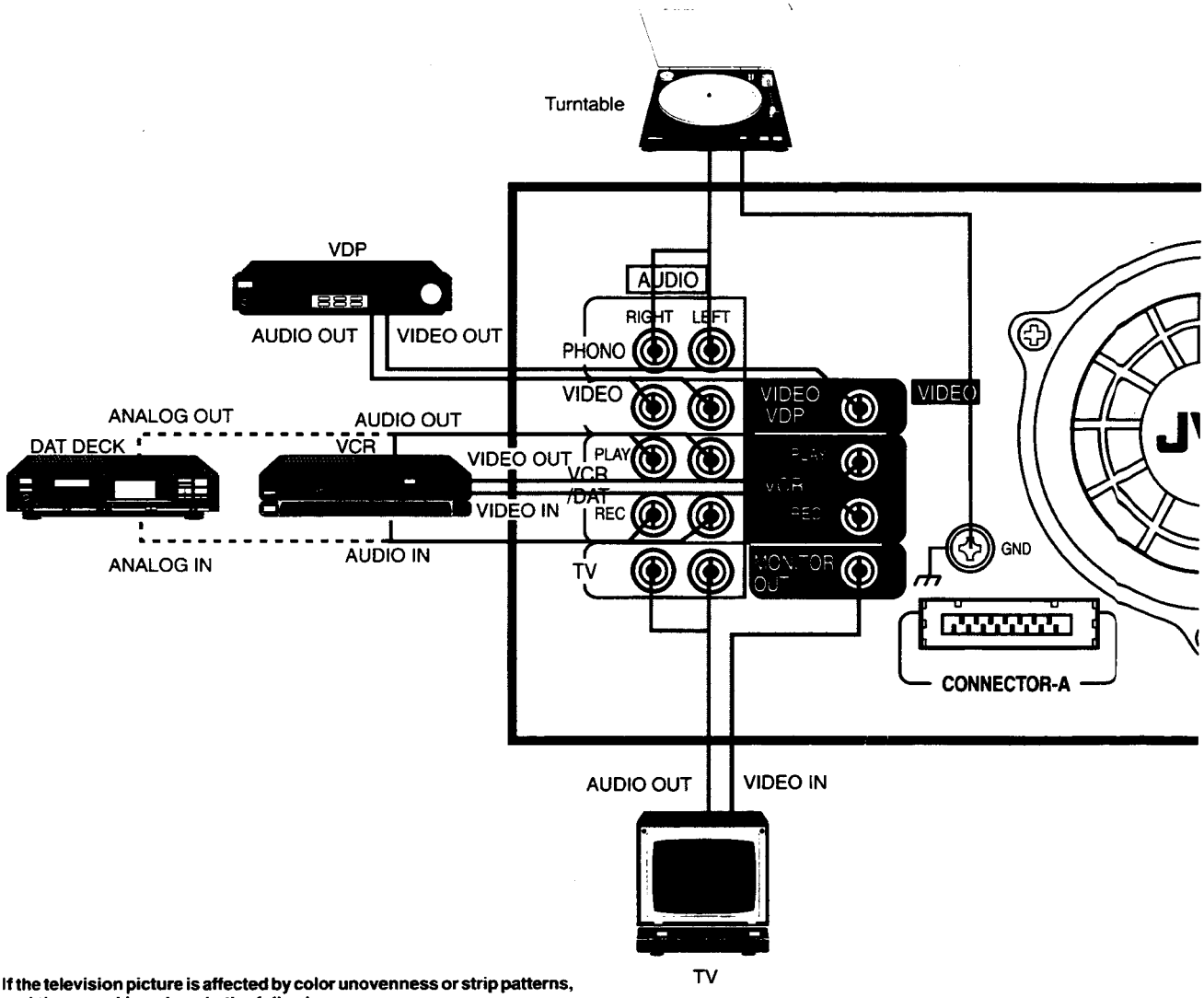
FM 75-ohm Antenna Cable
1. Loosen the screws holding the bracket.
2. Loosen the cap of the 300/75-ohm terminal.
3. Insert the round antenna cable through the bracket from below.
4. Make sure the shield braid on the cable contacts the bracket, and that the center conductor of the cable contacts the 300/75-ohm terminal.
5. Tighten the bracket screws and the cap on the 300/75-ohm terminal.



FM 300-Ohm Antenna Cable
1. Loosen the cap on the 300/75-ohm terminal.
2. Loosen the cap on the 300-ohm terminal.
3. Connect the two conductors of the antenna cable to the 300/75-ohm terminals and the 300-ohm terminal.
4. Tighten the caps on both terminals.
   Note:
   - Whether you use the 75-ohm or 300-ohm cable, make sure the antenna conductors do not touch any other terminals on the rear panel. This could cause poor reception.

Connecting Other Components

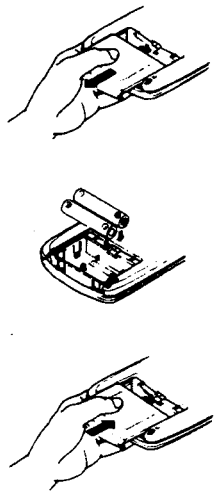
The amplifier can also be connected to a Turntable (PHONO), a Video Cassette Recorder (VCR), a Digital Audio Tape (DAT) Deck, Television (TV) and Video Disc Player (VDP).



If the television picture is affected by color unovenness or strip patterns, and the sound is noisy, do the following:

1. Move the television away from the system.
2. Take up any slack in the power, antenna, and connecting cords.

Installing Batteries in the Remote Controller

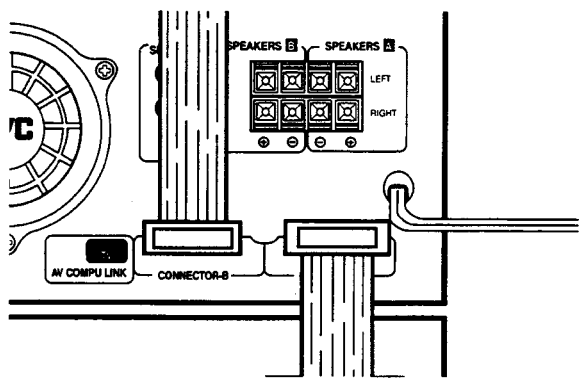


1. **Remove the battery compartment lid.**
   Press the lid and slide it in the direction of the arrow.
2. **Insert the batteries.**
   Use two UM-4/AAA/R03 size batteries.
   Make sure the + and - polarities on the batteries and compartment are the same.
3. **Attach the lid.**
   Press the lid and slide it in the direction of the arrow.

Note:

- Batteries installed incorrectly may burst or leak. Pay attention to the following:
  - When the Remote Controller is not in use for a long period of time, remove the batteries.
  - Do not mix old and new batteries.
  - Do not mix batteries of different types, even if their shapes are the same.
  - When batteries become weak, the operating distance of the Remote Controller is greatly reduced and you will need to replace the batteries.

AC power Connection



Plug the power cord on the back of the amplifier into a household electrical outlet.

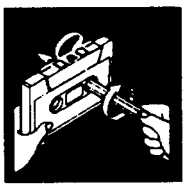
Caution: To prevent electric shock, turn all stereo components off before you install or remove power cords.

Important! Before you plug the power cord into an outlet, make sure all stereo components are connected correctly.

Care and Handling

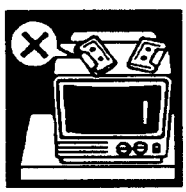
You must handle your compact disks, cassette tapes, and tape deck carefully to keep them for a long time.

Cassette Tape



- If the tape is loose in the cassette, take up the slack by inserting a pencil in one of the reels and rotating.
  If the tape is loose, it may get stretched, cut, or caught in the cassette.

- Do not touch the tape surface.

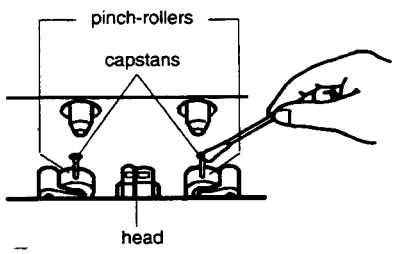


- Do not store the tape:
  — In dusty places
  — In direct sunlight or heat
  — In moist areas
  — On a TV or speaker
  — Near a magnet

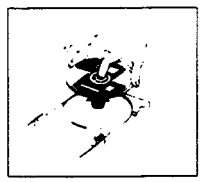
Tape Deck

- If the head, capstans, and pinch-rollers of the tape deck become dirty, the following will occur:
  — Impaired sound quality
  — Discontinuous sound
  — Fading
  — Incomplete erasure
  — Impossible to record

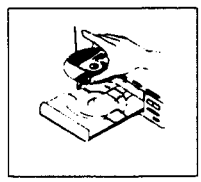
- Clean the head, capstans, and pinch-rollers with a cotton swab moistened with alcohol.



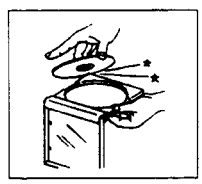
Compact Discs



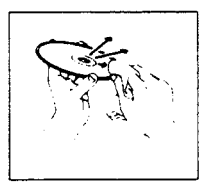
- Remove the CD from the case by holding it at the edges while pressing the center hole lightly.
- Do not touch the shiny surface of the CD, or bend the CD.



- Place the CD in the tray with the label up.



- Put the CD back in its case after use to prevent warping.
- Be careful not to scratch the surface of the CD when placing it back in the case.
- Avoid exposure to direct sunlight, temperature extremes, and moisture.



- If the CD becomes dirty, wipe it with a soft dry cloth in a straight line from center to edge.

Caution! Do not use any solvent (for example, conventional record cleaner, spray, thinner, benzine, etc.)

Only use compact-discs bearing the mark shown below.

COMPACT
disc
DIGITAL AUDIO

Important Notes

1. **Installation**
- Select a place which is level, dry, and neither too hot nor too cold (between 5 and 36 degrees Celsius/41 and 95 degrees Fahrenheit).
- Be sure there is adequate ventilation; poor ventilation may cause the unit to malfunction.
- Leave sufficient distance between the receiver and your TV.

2. **Power**
- Do not handle the power cord with wet hands!
- When unplugging from the wall outlet, always pull the plug, not the power cord.

3. **Malfunctions, etc.**
- Do not insert any metallic objects into the receiver.

Using the Amplifier

Using the Power Switch

1. **Press the POWER switch to turn on the stereo system.**
   When the POWER switch is not pressed and the power cord is plugged in, the stereo is in STANDBY mode and STANDBY indicator lights. In STANDBY mode, the stereo uses a small amount of power (23 watts) for the clock, memory contents, and any timers which are set.

2. **To disconnect power completely, unplug the power cord.**

Adjusting the Volume Controls

Volume
Turn the VOLUME knob to adjust the volume level of the speakers or headphones.

- Connect headphones to the PHONES jack on the amplifier for listening through headphones. No sound will be produced from the speakers.
- Turn the MIXING LEVEL knob to the SOURCE position unless a microphone is used.

Balance
Turn the BALANCE knob to adjust the left-and-right sound balance in the speakers or headphones.

Twin Bass
Turn the TWIN BASS knob to adjust the output level of the Subwoofers. Turning this control toward MAX will boost the low frequencies.

REAR VOL.
Adjust the volume of the rear speakers.

SOURCE DIRECT
Bypass the D.SEA circuit and the DAP/DSEP circuit to reproduce music as it was recorded.

Note:
- When the SOURCE DIRECT SWITCH is turned off, the PHONO level drops by 6 dB, but this is not a fault.

DEMO
You can use DAP/DSEP mode and D. SEA mode to create various kinds of sound.
- As the display changes, the sound varies.
  Try using DEMO while listening to music.

Using D.SEA Function

You can think of the D.SEA function as an enhanced version of the conventional Bass and Treble knobs on most sound systems. Use it to alter the tone of the source (for example, CD, tape, or broadcast) by increasing or decreasing the levels of selected frequency ranges.

By making certain frequency ranges louder or softer, you can change the sound to suit your taste. You can also choose from six pre-programmed D.SEA settings.

Using a D.SEA Pattern

You can use the D.SEA pattern you created, or one of the six pre-programmed D.SEA patterns, each of which has its own sound characteristics.

The pre-programmed D.SEA patterns are:

ROCK	Boosted low and high frequencies.
JAZZ	Gives a feeling of a live atmosphere. Good for acoustic music.
POPS	Good for vocal music.
CLASSIC	Set for wide and dynamic sound stereo systems.
H.PHONE	When creating tapes for headphone use.
CAR	When creating tapes for use in a car stereo.

1. **Press the D.SEA button on the Amplifier.**

2. **Press the D.SEA PRESET button to select a D.SEA Pattern.**

Each press of the D.SEA PRESET button changes the pattern displayed in the following order:

→ROCK→JAZZ→POPS→CLASSIC→H.PHONE→CAR
→MANUAL (your pattern)→(back to the beginning)

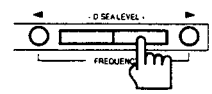
Controlling Sound with the D.SEA Function

The MX-90BK digital parametric equalizer (D. SEA) can set three frequency points ranging from 63 Hz to 16 kHz.

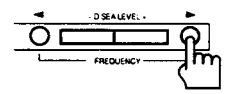
1. **Press the D.SEA button on the Amplifier.**

2. **Press FREQUENCY SELECT button on the amplifier to select a setting point.**

3. **Adjust the level with D. SEA LEVEL +, – on the amplifier.**



4. **Move the point left or right (bass or treble) to select the desired frequency.**



5. **Repeat steps 2 to 4, above, to set up to three frequency points.**

6. **Press the MEMORY button on the Amplifier to store your D.SEA pattern in memory.**

Changing the D.SEA Display

Five display modes (PEAK HOLD, PEAK LINE, SHOWER, MOUTH, TWIN) are available. Every time the DISPLAY button is pressed, the display mode changes in the following order:

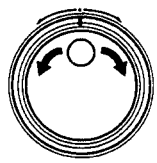
→PEAK HOLD→PEAK LINE→SHOWER→MOUTH
→TWIN→(back to the beginning)

PROCESSOR

The processor can be used in three modes: DAP (digital acoustic processor), for reproducing a concert hall sound, DSEP (digital special effects processor) for generating sound effects, and Dolby Surround, for producing the feeling in movie theater.

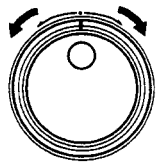
1. **Press the DAP/DSEP button.**

2. **Turn the jog dial (inner) to select the mode.**



→DOLBY SURROUND→DAP "D.CLUB"→"LIVE"→"CATHEDRAL"
→"CHURCH"→"HALL"→DSEP "SCRATCH"→"PITCH"→"FLANGER"
→(back to the beginning)

3. **Turn the shuttle ring (outer) to change the level of the effect.**
The display shows LEVEL.



Note:
- "Although the DAP and DSEP modes can be enjoyed with only front speakers, if rear speakers are used as well, the result is much more impressive.
In the DOLBY SURROUND mode, no effect is produced without the rear speakers. (For the connections, see page 6.)
Even if SOURCE DIRECT is selected, the rear speakers output sound.

DOLBY SURROUND

1. **Press the DAP/DSEP button.**

2. **Turn the jog dial (inner) to select DOLBY SURROUND mode.**
In this mode, videodisc and prerecorded videocassettes with DOLBY SURROUND sound can be reproduced.

3. **Adjust the volume of the rear speakers with REAR VOL.**
Set REAR VOL to the center position so sound from the rear speakers cannot be heard clearly.

To obtain the maximum DOLBY SURROUND effect, adjust the following;

1. **Turn the shuttle ring to adjust the delay time.**

When the rear speakers are slightly farther away than the front speakers ..... 15 ms
When the rear speakers are more or less as far away as the front speakers ..... 20 ms
When the rear speakers are a little closer than the front speakers ..... 25 ms
When the rear speakers are much closer than the front speakers ..... 30 ms

2. **Adjust the input balance with INPUT BALANCE on the amplifier.**
Turn INPUT BALANCE counterclockwise and clockwise so that sound (for instance, the speech of characters on your TV screen) comes from the front center position rather than from the rear speakers.

Using the DAP Function

1. **Press the DAP/DSEP button.**

2. **Turn the jog dial (inner) to select the desired mode.**
The selected sound field can be used for any source.

D. CLUB	Sound field of disco LIVE Sound field of club venue with low ceiling
LIVE	Sound field of low-ceilinged live venue.
CATHEDRAL	Sound field of domed stadium with high roof
CHURCH	Sound field of stone church with pronounced echo
HALL	Sound field of vocal recital hall. Suitable for microphone mixing

3. **Adjust the volume of the rear speakers with REAR VOL.**
Set REAR VOL to the center position so that the sound from the rear speakers cannot be heard clearly.

- Turn the shuttle ring to vary the DAP level.
To increase the DAP level, turn the shuttle ring clockwise: to decrease the level, turn the ring counterclockwise.

Using the DSEP Function

1. **Press the DAP/DSEP button.**

2. **Turn the jog dial (inner) to select the desired mode.**

SCRATCH	Repeatedly reproduce the same portion. When the shuttle ring is turned, the rear speakers output sound.
PITCH	The musical interval of sound can be changed. The rear speakers do not output sound.
FLANGER	The sound is cyclically undulated along with a jet plane sound.

3. **Turn the shuttle ring to create a sound.**
For SCRATCH and PITCH, an effect is only obtained when the shuttle ring is turned.

SCRATCH
- If you turn the shuttle ring counterclockwise, the scratch speed is reduced and the pitch falls. If you turn the ring clockwise the scratch speed increaces and the pitch rises. When you release the shuttle ring, the sound returns to normal.

PICTH
- When the shuttle ring is turned counterclockwise, the musical interval decrease. When the shuttle ring is released, it return to its original position, while the effect is maintained. When the shuttle ring is turned clockwise, the original sound is restored.
- When the shuttle ring is turned clockwise, the musical interval increase. When the shuttle ring is released, it returns to its original position, while the effect is maintained. When the shuttle ring is turned counterclockwise, the original sound is restored.

FLANGER
- When the shuttle ring is turned counterclockwise, the undulation slow down. When the shuttle ring is released, it returns to its original position, while the effect is maintained.
- When the shuttle ring is turned clockwise, the undulation speeds up. When the shuttle ring is released, it returns to its original position, while the effect is maintained.

Mixing the Microphone Sound

You can sing or narrate to the music with the optionally available microphone connected to the MIC jack.

1. **Connect the microphone.**
- Set MIXING LEVEL knob to SOURCE before connecting or disconnecting the microphone.

2. **Play your desired source.**

3. **Adjust the volume balance between the music and microphone using the MIXING LEVEL knob.**

Note:
- Raising the MIXING LEVEL too high may cause howling.
- Do not hold the microphone toward the speaker or move it away from the speaker.
- Lower the microphone level with the MIXING LEVEL knob.
- Lower the volume level with the VOLUME knob.

- When the microphone is no in use, set the MIXING LEVEL knob to SOURCE.

Using Turntable, VCR, DAT, TV and VDP

In addition to the CD Player, Tuner, and Cassette Tape Deck, the amplifier can also play a Turntable, a VCR, a DAT, a TV and a VDP.

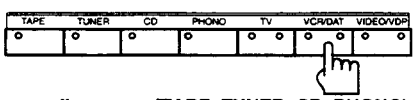
1. **To play records, press the PHONO button on the Amplifier.**
   To play VCR, or DAT, press the VCR/DAT button on the Amplifier.
   To play TV press the TV button on the Amplifier.
   To play VIDEO or VDP press the VIDEO/VDP button on the Amplifier.

2. **To operate the each component, refer to its instruction manual.**
- You can operate a JVC VCR using the remote controller.

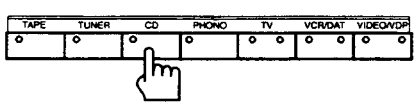
When a VCR is connected, the sound is heard through the speakers.

Mixing Audio and Video

1. **Select a video source (TV, VCR/DAT, VIDEO/VDP).**
   The right-hand indicator shows the selected video source.



2. **Select an audio source (TAPE, TUNER, CD, PHONO).**
   The left-hand indicator shows the selected audio source.



Using the LEARNING CSRP Feature

The LEARNING CSRP (Compu-link Source Related Preset system) is the state-of-art electronic feature that learns VOLUME and other control settings on each source. This was previously done automatically each time a difference source was played back or each time the system was turned off. It remembers the last five settings of each parameter you has set and automatically recalls the most frequently used ones.

This feature lets you invoke your favorite control settings by simply selecting a source (TAPE, TUNER, CD, PHONO, TV, VCR/DAT, VIDEO/VDP) without repeating many settings each time sources are changed.

When the LEARNING CSRP button is set to ON, the following parameters are learned each time a difference source was played back or the system was turned off.

- Volume level
- D.SEA settings (Preset Pattern and display mode)
- DAP/DSEP setting (Mode)

They will be set based on the last five settings.

- D.SEA ON/OFF
- DAP/DSEP ON/OFF

They will be set the last setting.

Press the LEARNING CSRP button

The indicator light will go on.

— When sources are switched, the VOLUME level, D.SEA, and DAP/DSEP are automatically set.
— When turning the POWER off, the VOLUME control automatically turns toward MIN.
— When turning the POWER on again, the VOLUME control automatically turns up to the position set by the LEARNING CSRP function.

Using the Loudness Function

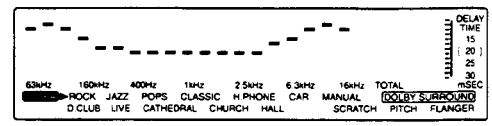
When LEARNING CSRP in on, the loudness function boosts low-frequency sounds to compensate for the ear's lack of sensitivity to these sounds at low volume.

1. **Press the D.SEA button to turn the D.SEA on.**

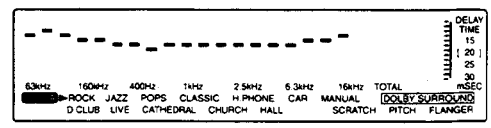
2. **Press the D.SEA PRESET button to select a preset pattern other than MANUAL.**

3. **Press the LEARNING CSRP button,**
   The indicator light will go on.

- If the volume level is lowered:
  Low and high frequencies are boosted to make the sound powerful and distinct.



- If the volume level is raised:
  The D.SEA setting becomes similar to the preset pattern and the sound becomes natural.



Using the CD Player

Starting Playback

1. **Press the OPEN/CLOSE button on the CD Player.**
   The CD tray slides out.

2. **Place a CD (with a label facing up) in the tray, and press the OPEN/CLOSE button again.**
   The tray slides back in.

3. **Press the PLAY/PAUSE button on the CD Player, or the CD button on the Amplifier.**
   The CD Player begins playing the first track on the CD.

Stopping Playback and Ejecting the CD

1. **Press the STOP/CLEAR button.**

2. **Press the OPEN/CLOSE button, and take the CD out of the tray.**

3. **Press the OPEN/CLOSE button again to close the tray.**

Stopping and Restarting Playback

1. **Press the PLAY/PAUSE button.**
   Playback stops temporarily.

2. **Press the PLAY/PAUSE button again.**
   Playback restarts.

Note:
- When Tuner is selected as the source, Cd OFF is displayed, and only the OPEN/CLOSE disc tray and PLAY/PAUSE buttons can be used. To use other buttons, press the CD button on the Amplifier or the PLAY/PAUSE button on the CD Player first.

Selecting a Track to Play

Press the SEARCH buttons on the CD player to scan through the track numbers.

Press the ⏮ button to find tracks with decreasing numbers, and the ⏭ button to find tracks with increasing numbers.

- If you press the SEARCH buttons when the CD Player is in the pause/stop mode, you will find the track you selected.
  You can restart playback by pressing the PLAY/PAUSE button.

- If you press the SEARCH button continuously during playback, the CD will advance rapidly in the direction of the button.

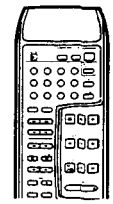
Using the Remote Controller to Select a Track

There are three ways to search for a track with the remote controller:

Numeric keypad

AUTO SEARCH buttons ⏮ or ⏭

MANUAL SEARCH buttons ◀◀ or ▶▶



Using the Numeric Keypad

1. **Press the CD 10KEY button on the Remote Controller.**
2. **Enter the track's number with the numeric keys.**

- If the track you want to hear is the 8th track, press the 8 key.
- If the track you want to hear is the 15th track, press the +10 key and the 5 key.
- If the track you want to hear is the 20th track, press the +10 key and the 10 key.

Using the Auto Search Buttons

Press the Auto Search ⏮ or ⏭ button on the Remote Controller to scan through the track numbers.

Using the Manual Search Buttons

Press the Manual Search ◀◀ or ▶▶ button on the Remote Controller to search for a certain part of the track.

Listening Repeatedly

Using the REPEAT button, you can play the entire CD or a selected track repeatedly.

Playing the Entire CD Repeatedly

- During playback, press the REPEAT button once.

REPEAT

The CD will play through the last track and then start over again. It will keep repeating until you cancel the repetition.

Playing a Selected Track Repeatedly

- During playback, press the REPEAT button twice.

REPEAT 1

The current track will play to the end and then start over again. It will keep repeating until you cancel the repetition.

Cancelling Repetition

Press the REPEAT button again.
Each track will play to the end and not repeat.

Displaying the Elapsed and Remaining Playing Time

Using the DISPLAY button, you can display the total time the CD (or current track) has been playing, and the amount of time that remains. This is useful in situations such as recording, when you need to know how long the track or CD has been playing, or the amount of time that remains on the track or CD.

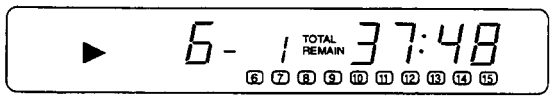
Press the DISPLAY button to show the time you want.

There are four display times:

EACH	The total elapsed playing time since the beginning of playback of the current track
EACH REMAIN	The time remaining until the end of the current track
TOTAL	The total elapsed playing time since the beginning of playback of the CD
TOTAL REMAIN	The time remaining until the end of the CD

The display changes each time you press the DISPLAY button.

For Example:



Display mode:	TOTAL REMAIN
Current track:	6th
Total remaining time:	37 minutes 48 seconds

Programming Your Own Playback Sequence

You can program the CD Player to play back the tracks of a CD in any order.

1. **Press the STOP/CLEAR button on the CD Player.**
   This puts the CD Player in STOP mode and clears existing programs from the memory.
2. **Press the PROGRAM button on the CD Player or the PRGM button on the Remote Controller.**

3. **Press the CD 10KEY button on the Remote Controller.**
4. **Enter the track numbers with the numeric keys in the order you want them played back.**

- You can program up to 32 tracks.

  If the total time of all the programmed tracks is 100 minutes or more, the display will show " -- : -- " (since the highest time the display can show is "99:59").

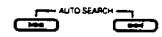
5. **Press the PLAY/PAUSE button on the CD Player, or the CD CONTROL ▷ button on the Remote Controller.**
   Playback begins with the first track in the program.
6. **To add a track to the program during playback, enter the track number with the numeric keys on the Remote Controller.**
   The new track is added to the end of the program.

Checking the Program

You can check the programmed sequence of playback to determine which tracks will be played in which order.

Note:
- The program contents cannot be displayed during playback. Press the STOP/CLEAR button if the CD Player is in play mode.

1. **Press the AUTO SEARCH button once.**



The first track in the program is displayed, along with its sequence number.

For example:

This display shows that the 6th track will be played first.

2. **Press the SEARCH button repeatedly.**
   The rest of the tracks in the program are displayed, along with their sequence numbers.

Listening to Programmed Tracks Repeatedly

1. **Press the REPEAT button to listen to the programmed sequence of playback repeatedly.**

2. **Then press the PLAY/PAUSE button.**

Updating the Program

You can add and delete tracks from the program.

Adding Tracks to the Program

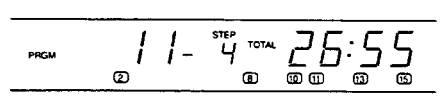
1. **Press the CD 10KEY button on the Remote Controller.**
2. **Enter the track numbers with the numeric keys in the order you want them played back.**
   The track numbers you enter are added to the end of the program.

Deleting Tracks from the Program

Note:
- The program contents cannot be deleted during playback. Press the STOP/CLEAR button if the CD Player is in play mode.

1. **Press the SEARCH buttons to select the track to be deleted from the program.**

For example:



This display shows that the 11th track is selected to be deleted.

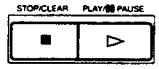
2. **Press the CANCEL button on the Remote Controller.**

- The track being displayed will be deleted.

Updating the Entire Program

You can replace the old program with a new one.

1. **Press the STOP/CLEAR button on the CD Player.**



This clears the programmed sequence of playback from memory.

To clear the program during playback:

- Press the STOP/CLEAR button twice (once to stop, twice to clear the program from memory).

2. **Press the PROGRAM button on the CD Player or the PRGM button on the Remote Controller.**
3. **Press the CD 10KEY button the Remote Controller.**
   Pressing the CD 10KEY button puts the numeric keys in CD mode.
4. **Enter the track numbers with the numeric keys in the order you want them played back.**

Cancelling Programmed Playback

1. **Press the PROGRAM button.**

This puts the CD Player in normal playback mode. The tracks will play back in their regular order.

Playing Tracks at Random

In RANDOM mode, the CD player selects and plays tracks at random.

1. **Press the RANDOM button on the CD player.**
   CD player starts playing tracks at random.

2. **To cancel random playback, press the STOP/CLEAR button.**

- When all tracks in the disc are played once, the random playback ends.
- If you set the CD player to the REPEAT mode by pressing the REPEAT button, even after all tracks have been played once, the CD player will again select and play at random to continue the random playback.

Using the AUTO POWER OFF Function

The power can be automatically turned off when the CD playback is completed.

1. **Press the AUTO POWER OFF button on the CD player.**
   The indicator light will go on.

2. **Press the PLAY/PAUSE button on the CD player or the CD CONTROL button on the Remote Controller.**
   The power goes off automatically when the CD playback is complete.

Using the Tape Deck

The tape deck has an Auto Tape Select feature, which can tell the difference between various types of cassette tape. It can distinguish between Normal (Type), CrO_2 — High Position (Type II), and Metal (Type IV).

Playing a Tape

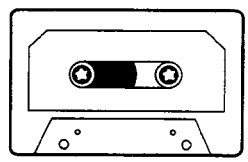
1. **Press the EJECT button to open the cassette holder.**
2. **Insert a cassette and shut the cassette holder.**
3. **If the tape was recorded with Dolby noise reduction, use the DOLBY NR switch.**

Set the switch to the same mode as the tape was recorded in.

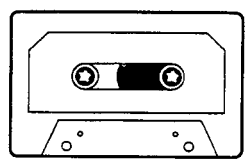
4. **Start playback by either of the following methods:**

- Press the ◁ ▷ button.

Press the ▷ button if the tape is wound mostly on the left side.



Press the ◁ button if the tape is wound mostly on the right side.



- Press the TAPE button on the amplifier.

Note:
- When cassettes are in both decks A and B, deck B starts first.

Stopping Playback and Ejecting the Tape

1. **Press the STOP button on the tape deck.**

2. **Press the EJECT button to open and remove the tape from the cassette holder.**
3. **Shut the cassette holder.**

Note:
- If the system is turned off while a tape is playing, you may not be able to eject the tape. You will need to turn the system back on and press the EJECT button to open the cassette holder.

Stopping and Restarting Playback

1. **Press the PAUSE button on the tape deck.**

Playback of the tape in deck B stops temporarily.

Note:
- The PAUSE button only applies to deck B.

2. **Press the ◁ or ▷ button.**
The restarts playback of the tape in deck B.

Changing the Playback Direction

1. **To change the playback direction during playback, press the ◁ or ▷ button.**
The other side of the tape will now play.
2. **To change the playback direction without starting playback, press the ◁ or ▷ button while also pressing the stop ■ button.**
This allows you to set the tape direction for a timed recording.

First-Winding the Tape

Press the ◀◀ or ▶▶ buttons on the Tape Deck to advance the tape rapidly in the direction of the arrows.

Listening to Tape Continuously

You can set the tape deck up to play both sides of the tapes in decks A and B repeatedly.

1. **Insert cassettes into decks A and B.**
2. **Set the REV.MODE switch to ⇄ (auto reverse) position.**

non reverse ← → auto reverse

- The tape deck will be placed in auto reverse mode, which means that it will play all of one side of the tape and then all of the other side.

3. **Press the ◁ or ▷ button of the deck to be started first.**

- Now both sides of both tapes will play repeatedly.
- After playback in reverse direction ends, the playing deck (A or B) will be switched to the other deck.
- If the tape deck is not placed in auto reverse mode, only one side of the tapes in deck A and B will play continuously.
- If you press the TAPE button on the Amplifier, deck B will start first.

Skipping Blanks

When there is a blank of 10 seconds or more, the tape skips forward to the beginning of the next track.

1. **Press the BLANK SKIP button on the tape deck.**

2. **Press the ◁ or ▷ button.**

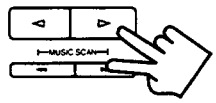
Blank Skip playback starts.

Note:
The BLANK SKIP function is not effective:
- When the track contains an area of low sound level.
- When the blank between tracks is short.
- When there is noise, for example, a hum between tracks.

Music Scanning

The music scan function will detect the blank segments between tracks. The blank should be about 4 seconds long for the music scan to be effective.

You can locate the beginning of the current track or next track quickly by pressing the playback button and the fast-winding button simultaneously.



Searching for Beginning of the Current Track

- If the tape is traveling in the forward direction, press the ◀◀ fast-winding button while simultaneously pressing the ▷ playback button.
- If the tape is traveling in the reverse direction, press the ▶▶ fast-winding button while simultaneously pressing the ◁ playback button.

Searching for Beginning of the Next Track

- If the tape is traveling in the forward direction, press the ▶▶ fast-winding button while simultaneously pressing the ▷ playback button.
- If the tape is traveling in the reverse direction, press the ◀◀ fast-winding button while simultaneously pressing the ◁ playback button.

Note:
- The deck that is playing will stop if the music scan function is used on the other deck.

The music scan function is not effective:
- When the track being scanned contains an area of low sound level.
- When the blank between tracks is short.
- When there is noise, for example, a hum between tracks.

Recording a Tape

The recording system used Dolby HX PRO to improve the high-frequency characteristic and to reduce level fluctuations at low frequencies. You will enjoy dynamic recording ranging from low through high frequencies.

Note:
- No switch operation or operation at playback si needed.

Recording Notes:

- Deck A is used for playback only, and deck B is used for both recording and playback.
- To reduce hiss, use the Dolby noise reduction system. Set the DOLBY NR switch to B or C.

  B: Popular noise reduction
  C: Highly effective noise reduction

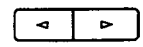
- To record on sides A and B continuously, set the REV. MODE switch to the auto reverse (⇄) position, and start dubbing in the forward direction (▷) for both decks a and B.
- The recording level is set automatically.
- If the small tabs on cassette tapes to prevent accidental erasure have been removed, the contents of the tape cannot be recorded or erased over. To record or erase, cover the holes with adhesive tape. (The tab in the upper left corner is the tab for the side facing you, and the other tab is for the opposite side.)
- If you are recording an AM broadcast and you hear interference, move BEAT CUT switch on the back of the stereo from Position 1 (the normal mode) to Position 2.

Recording from Various Sources

1. **Insert a cassette for recording into deck B.**
2. **Select the source you are recording from.**
3. **Press the Pause button on the Tape deck while simultaneously pressing the REC/REC MUTE button.**

This puts the deck B in REC/PAUSE mode.

4. **Start the source to be recorded.**
5. **Press the Play ◁ or ▷ button on the deck B to start recording.**



To record on both sides of tape, start recording in the forward (▷) direction.

6. **To stop recording, press the Stop ■ button.**
7. **To stop recording temporarily, press the Pause ❚❚ button on deck B.** To restart recording again, press the Play button ◁ or ▷.

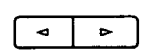
Dubbing a Tape

Normal-speed Dubbing

1. **Insert the cassette for playback into deck A and the cassette for recording into deck B.**

- The type of tape (Normal, CrO_2, or Metal) used for recording must be the same as that used for playback.
- To dub a tape which was recorded with Dolby noise reduction, set the DOLBY NR switch on the Tape Deck, the D. SEA button and DSEP button on the Amplifier to a OFF position.
- When dubbing a tape, turn off BLANK SKIP.

2. **Press the Pause ❚❚ button while simultaneously pressing the REC/REC MUTE button on deck B.**
   This places deck B in REC/PAUSE mode.
3. **Press the Play button ◁ or ▷ (depending on which side of the tape you want to record from) on deck A.**
4. **Press the Play button ◁ or ▷ (depending on which side of the tape you want to record onto) on deck B.**



The tape-to-tape recording starts.

Note:
- You cannot listen to another source during normal-speed dubbing.
- To stop normal-speed dubbing before the end of either the playback or record tape, press the Stop ■ buttons on decks A and B.

High-Speed Dubbing

1. **Insert the cassette for playback into deck A and the cassette for recording into deck B.**

- To change the playback direction of deck A, hold down the Stop ■ button and press the ◁ or ▷ button.

2. **Press the HIGH SPEED DUBBING button on the Tape Deck.**

The high-speed tape-to-tape recording starts.

Note:
- You can listen to another source while high-speed dubbing is in progress.
- To stop high-speed dubbing before reaching the end of either the playback or record tape, press the Stop ■ button on deck B.
- If nearby television is on during high-speed dubbing, beeping noise may be recorded onto the recorded onto the record the record tape. turn off the television or move it farther away.

3. **Press the Stop ■ button on deck A when you hear the end of a track to record from many different tapes) for example, to create a "Greatest Hits" tape)**

Deck A stops playback, and deck B automatically creates about a 4 second blank, then pauses.

Note:
- If you don't want this blank, press the PAUSE ❚❚ button on deck B before pressing the Stop ■ button.

4. **Put another tape into deck A.**

5. **Press the HIGH SPEED DUBBING button on the Tape Deck.**
The high-speed dubbing restarts.

6. **To record tracks from other tapes, repeat steps 3 - 5.**

- During high-speed dubbing, sound altered with D. SEA or DAP/DSEP cannot be recorded.

Note:
- It may be uniawful to record or playback copyrighted material without the consent of the copyright owner.

Erasing a Tape

1. **Insert the tape to be erased into deck B.**

- To erase music on both sides, set the REV. MODE switch to the auto reverse position.

2. **Press the Pause ❚❚ button while simultaneously pressing the REC/REC MUTE button.**
This puts the deck in REC/PAUSE mode.

3. **Press the TAPE button on the amplifier.**

4. **Press the ◁ or ▷ button (depending on which side of the tape you want to erase) on deck B.**
The erasure of the tape begins.

Direct Recording from the CD Player

Direct recording permits a tape deck to start recording automatically in synchronism with a CD player.

1. **Insert the cassette for recording into deck B.**
- Set the REV. MODE switch to Auto reverse ⊂⊃ position if you want to record on both sides of the cassette.

2. **Put a CD in the CD Player.**

3. **Press the CD DIRECT REC button on the Tape Deck.**

- The CD Player and the Tape Deck are activated, and recording begins with the first track of the CD.
- To stop direct recording, press the Stop ■ button on deck B or the STOP/CLEAR button on the CD Player.

4. **To fade out the CD gradually at the end of the tape, press the FADE button on the CD Player.**

The volume level of the last track on the tape is lowered gradually to 0. This makes a nice ending to your tape and prevents an abrupt cut-off of music if the tape ends before the CD.

5. **To cancel the fade-out function during recording, press the FADE button again on the CD Player.**
The fade-out function operates in both forward and reverse directions.

- When the end of the tape is reached, the tape is rewound to the beginning of the last track.
- The last track is played back again from the CD Player and recorded again on the tape, This time the sound level is reduced gradually at the end.

Dolby noise reduction and HX PRO headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX PRO originated by Bang and Olufsen. "Dolby", the Double-D symbol and HX PRO are trademarks of Dolby Laboratories Licensing Corporation.

Recording CD Tracks in Auto-Edit Mode

In Auto-Edit mode, tracks from the CD will automatically be selected to determine which tracks should go on side A of the tape and which should go on side B.

The selection is based on the lengths of the tracks and the length of the tape. This ensures a proper "fit" of the tracks recorded on the tape. It prevents a track from being cut off when the end of the tape is reached.

1. **Insert the cassette for recording in deck B.**

- Set the REV. MODE switch to the Auto reverse ⊂⊃ position if you want to record on both sides of the cassette.

2. **Put the CD in the CD Player.**

3. **Press the STOP/CLEAR button on the CD Player.**

4. **Press the A. EDIT button on the CD Player to tell the system the length of the tape in the Tape Deck.**

- The tape length most suitable for CD recording is displayed first.
- Each time the A. EDIT button is pressed, the next standard tape length blinks, in this order:

→C46→C54→C60→C74→C90→(back to the beginning)

- You can also enter a non-standard tape length from the Remote Controller using the numeric keys.

For example: To enter a tape length of 50 minutes, press the CD 10KEY button on the Remote Controller, then press + 10 key four times and the 10 key once.

5. **Press the SIDE A/B button on the Remote Controller.**

- The CD Player calculates which tracks should be placed on side A and which should be placed on side B.
- If you do not press the SIDE A/B button, the CD Player automatically decides which tracks should be placed on sides A and B about 4 seconds after the A.EDIT button is pressed.

Note:
- Up to 16 tracks can be allocated for each side of the cassette.

6. **Press the CD DIRECT REC button on the Tape Deck.**

- The tape is automatically rewound to the beginning of side A, and then recording begins.
- When the Tape Deck is set in the auto reverse mode, after the last track is recorded on side A, the tape deck high-speed-erases to the end of side A. Then it changes direction to side B and begins recording the remaining tracks.
- To stop recording, press the Stop ■ button on deck B, or press the STOP/CLEAR button on the CD Player.

Note:
- During recording in the Auto-Edit Mode, do not operate the CD Player.

Recording CD Tracks in Programmed-Edit Mode

In Programmed-Edit Mode, you decide which tracks from the CD will be recorded, and in what order.

1. **Insert the cassette for recording in deck B.**

- Set the REV. MODE switch to the Auto reverse ⇄ position if you want to record on both sides of the cassette.

2. **Put the CD in the CD Player.**

3. **Press the STOP/CLEAR button on the CD Player.**

4. **Press the PROG. EDIT button on the Remote Controller to tell the system the length of the tape in the Tape Deck.**

- Each time the PROG. EDIT button is pressed, the next standard tape length blinks, in this order:

  →C46→C54→C60→C74→C90→(back to the beginning)

- You can enter a non-standard tape length from the Remote Controller using the numeric keys.

For example: To enter a tape length of 50 minutes, press the CD 10KEY button on the Remote Controller, then press + 10 key four times and the 10 key once.

5. **Press the SIDE A/B button on the Remote Controller.**

- This tells the system that you will be choosing tracks to be recorded on side A of the tape.
- The length of time for one side of the tape is displayed. This is half of the total tape length. The total time for the tracks you choose for each side cannot exceed this time.
- If you do not press the SIDE A/B button, side A is automatically selected.

6. **Press the CD 10KEY button on the Remote Controller.**

7. **Enter the numbers of the tracks you want recorded on one side of the tape.**

- Tracks on a CD assigned numbers 32 or greater cannot be entered in the program.
- If the length of a track exceeds the remaining tape length, the time indication blinks on the display. Choose a different track number.
- To delete a track from the program, specify the track with the AUTO SEARCH buttons on the Remote Controller. Then press the CANCEL button on the Remote Controller.

8. **If you also want to record on the other side of the tape, press the SIDE A/B button on the Remote Controller and repeat step 7.**

9. **Press the CD DIRECT REC button on the Tape Deck.**

- The tape is automatically rewound to the beginning of side A, and then recording begins.
- When the Tape Deck is set in the auto reverse mode, after the last track is recorded on side A, the tape deck high-speed-erases to the end of side A. Then it changes direction to side B and begins recording the remaining tracks.
- To stop recording, press the Stop ■ button on deck B, or press the STOP/CLEAR button on the CD Player.

Note:
- The program cannot be edited during recording. To change the program, press the STOP/CLEAR button on the CD Player and begin with step 4 of this procedure.

Note:
- During recording in the Programmed-Edit mode, do not operate the CD Player.

Recording with the D.SEA Function

The D.SEA Function is used to alter the tone of the source by increasing or decreasing the levels of selected frequency ranges.

You can use this function to control the way the tracks from the CD will sound when they are recorded on the tape.

1. **Insert the cassette for recording in deck B.**

2. **Press the D.SEA button on the Amplifier.**

- The indicator light will go on.
- To created the desired sound, see "Controlling Sound with the D.SEA Function".

3. **Press the ◁ or ▷ button on the Tape Deck while holding down the REC/REC MUTE button.**
   Recording starts.

D.SEA Function Notes

- The D.SEA Function cannot be used during high-speed dubbing.
- If the source you are recording from is a cassette in deck A that was created using Dolby noise reduction, the noise reduction effect is lost when you dub using the D.SEA Function.
- To keep the noise reduction effect of the cassette in deck A, use either of these methods:

— High-speed dubbing.
— Normal speed dubbing, with the D.SEA Function off and the DOLBY NR button set to OFF.

- When LEARNING CSRP is ON, do not change the volume level during recording because the loudness feature will cause the D.SEA settings to be altered.

Recording with the DAP/DSEP Function

Sound can be recorded with a DAP/DSEP effect.

1. **Insert the cassette for recording in deck B.**

2. **Press the DAP/DSEP button on the Amplifier.**

- The Indicator light will go on.
- To create the desired sound, see "PROCESSOR".

3. **Press the ◁ or ▷ button on the Tape Deck while holding down the REC/REC MUTE button.**
   Recording starts.

DAP/DSEP Function Notes

- The DAP/DSEP Function cannot be used during high-speed dubbing.
- If the source you are recording from is a cassette in deck A that was created using Dolby noise reduction effect is lost when you dub using the DAP/DSEP Function.
- To keep the noise reduction effect of the cassette deck A, use either of these methods:

— High-speed dubbing.
— Normal speed dubbing, with the DAP/DSEP Function off and the DOLBY NR button set to OFF.

- The rear speaker sound is not recorded.
- In the DOLBY SURROUND mode, the effect sound is not recorded.
- When the audio track of a DOLBY SURROUND videocassette is recorded, turn DAP/DSEP and D. SEA on the amplifier, and DOLBY NR on the tape deck, off.
- While recording, do not turn on or off DAP/DSEP.

Note:
- When sound is recorded with DAP/DSEP and D. SEA turned off, by selecting SOURCE DIRECT, higher quality sound can be recorded.

Creating a Blank During Recording

Use the Record Muting function when you do not want to record a section of the source.

1. **Press the REC/REC MUTE button on the Tape Deck at the beginning of the section you don't want to record.**

   A blank of about 4 seconds is created on the cassette, and then the deck pauses.

2. **To start recording again, press the ◁ or ▷ button.**

- To create a blank of more than 4 seconds, hold down the REC/REC MUTE button. When you release this button, the deck pauses.
- When the source you are recording from is the CD Player and the CD DIRECT REC button is used, the REC/REC MUTE button will not function.

Recording with the Timer

The Tape Deck can be set up to record a tape automatically. This is especially useful for recording broadcasts when you are not around, or late at night when you are asleep.

1. **Insert a cassette for recording into deck B.**

2. **Set the timer, by following the steps in "Setting the Timers".**

3. **Select one of the following sources:**

TUNER TIMER REC	Records TUNER preset stations
- - TIMER REC	Records from the source selected before turning off the system.

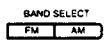
Using the Tuner

Listening to Broadcasts

The Tuner can receive FM and AM broadcasts. Stations can be tuned in manually, automatically, or from preset memory storage.

Manual Tuning

1. **Select the broadcast band you want to tune in by pressing the FM or AM button on the Tuner.**



2. **Press the TUNING/TIMER/DIMMER button (◁ or ▷) to tune in a station.**

3. **Hold down the TUNING/TIMER/DIMMER button to change the frequency rapidly, then tap the button to set the frequency precisely.**

Automatic Tuning

1. **Select the broadcast band you want to tune in by pressing the FM or AM button on the Tuner.**
2. **Hold down the TUNING/TIMER/DIMMER button (◁ or ▷) for a moment, and then release the button.**

- When a station is tuned in, the TUNED indicator lights up.

Note:
- The Tuner will tune in the nearest strong station.

Presetting Stations in Memory

You can store up to 40 of your favorite radio stations (FM and AM) in memory, giving you quick, easy access to the stations.

1. **Select a band by pressing either the FM or AM button on the Tuner.**
2. **Press the TUNING/TIMER/DIMMER button (◁ or ▷) to tune in a station.**
3. **Press the MEMORY button on the Tuner.**
   The "MEMORY" indicator on the Tuner display blinks for 5 seconds.

4. **Press the PRESET button (◄ or ►) on the Tuner to assign a number (1-40) to the station, or enter a number (1-40) with the Remote Controller's numeric keypad.**

   Example:
   To enter 7, press "7".
   To enter 17, press "+10", then "7".
   To enter 20, press "+10" then "10".

- Before using the numeric keypad, press either the FM or AM button. This will allow you to use the numeric keypad in the Tuner mode.
- If the "MEMORY" indicator has stopped blinking, press the MEMORY button again and repeat step 4.
- If the preset number you choose already has a station assigned to it, the old station will be replaced by the new one.

5. **Press the MEMORY button again.**
   This stores that station in memory, with the preset number (1-40) you chose in step 4.
6. **Repeat steps 1-5 for each station you want to store in memory with a preset number.**

Caution! If the system is unplugged or if a power failure occurs, the preset stations stored in memory may be lost.

Cancelling Preset Stations

1. **Press the CANCEL button on the Tuner.**
   The "CANCEL" light on the Tuner display blinks for 5 seconds.

2. **Press the PRESET button (◄ or ►) on the Tuner to select the preset station you want to cancel.**
   If the "CANCEL" light has stopped blinking, press the CANCEL button again and repeat step 2.
3. **Press the CANCEL button again.**
   The preset station will be cancelled.

Tuning in Preset Stations

- Press the PRESET button (◄ or ►) on the Tuner to select the preset station you want. The preset station numbers are displayed sequentially each time you press the PRESET button.
- You can also select a station by entering its preset number on the Remote Controller's numeric keypad.
- Before using the numeric keypad, press either the FM or AM button. This will allow you to use the numeric keypad in the Tuner mode.

FM Reception Modes

There are two FM reception modes: AUTO and MONO.

AUTO: Stations are tuned in with either STEREO or MONO, depending on the strength of the FM signal.
MONO: Stations are tuned in with MONO only. This will reduce interference noise of weak stations and make the reception sound better.

1. **Press the FM MODE/MUTE button on the Tuner to switch between the AUTO and MONO reception modes.**

2. **Press the FM MODE/MUTE button on the Tuner to the AUTO mode to receive the station in stereo.**

- If a stereo broadcast is received when the FM band is selected, the "STEREO" light will be displayed on the Tuner.
- If the FM Reception Mode is MONO, the "STEREO" light will not be displayed.

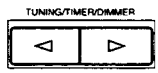
Using the Timers

Setting the Clock

The clock will be displayed even when the system is turned off. Pressing the TUNING/TIMER/DIMMER buttons (◁ or ▷) will switch between two brightness levels for the clock.

1. **Press the CLOCK ADJUST button on the Tuner.**
   The hours digits blink.

2. **Press the TUNING/TIMER/DIMMER button (◁ or ▷) to set the hours digit.**



- Press the ▷ button to increase the hour, and press the button to decrease the hours.
- To enter a new hour digit, press the CANCEL button and repeat step 2.

3. **Press the MEMORY button on the Tuner.**

This sets the hour portion of the time.

The minutes digits will blink.

4. **Press the TUNING/TIMER/DIMMER button (◁ or ▷) to set the minutes digit.**

- It's a good idea to set the minutes digits one minute ahead. Then you can start the clock when it reaches the set time exactly (according to the correct time from the TV, radio, or telephone).
- To enter a new minute digit, press the CANCEL button and repeat step 4.

5. **Press the MEMORY button.**
   The clock starts as soon as you press the MEMORY button.

Caution: If there is a power failure, or if you unplug the stereo, the clock time will be lost. Repeat steps 1-5 when power is restored.

- Use the TUNING/TIMER/DIMMER buttons to change luminosity of time display by two steps under STANDBY status.
  ► : Increases luminosity
  ◄ : Decreases luminosity

Setting the Timers

With the timers you can make tape recordings of broadcasts, CD's, or tapes when you're not around. You can also play these music sources at specified times without recording them.

- Use TIMER1 and TIMER2 to record a radio broadcast when you're not home, or late at night when you're asleep.
- Use the DAILY timer to record a broadcast that occurs at the same time every day.
- The procedure for setting TIMER1, TIMER2, and the DAILY timer is the same. You need to tell the system:
  — The name of the timer (TIMER1, TIMER2, or DAILY).
  — The time the timer should turn the system on.
  — The time the timer should turn the system off.
  — The source the timer should turn on (Tuner, CD, or Tape).
  — The volume level that should be used during recording or playback.

Note:
- The clock must be set to the correct time for the timers to be effective.

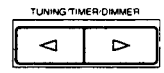
Caution! Do not operate the remote controller when you are programming the timer.

Choosing a Timer

Press the TIMER1, TIMER2, or DAILY button on the Tuner to select a timer. This puts the system in the Timer Setting mode. The information that the system expects next will blink on the display.

Setting the Start Time

1. **Press the TUNING/TIMER/DIMMER buttons to set the hour that the system will turn on.**



The ◁ button makes the hour number decrease, and the ▷ button makes the hour number increase.

2. **Press the MEMORY button.**
   This stores the hour portion of the start-time in memory.

3. **Press the TUNING/TIMER/DIMMER buttons to set the minute.**

4. **Press the MEMORY button.**
   This stores the minute portion of the start-time in memory.

Setting the Stop Time

1. **Press the TUNING/TIMER/DIMMER buttons to set the hour that the system will turn off.**
2. **Press the MEMORY button.**
   This stores the hour portion of the stop-time in memory.
3. **Press the TUNING/TIMER/DIMMER buttons to set the minute.**
4. **Press the MEMORY button.**
   This stores the minute portion of the stop time in memory.

Selecting the Source

1. **Press the TUNING/TIMER/DIMMER button to select a source.**

   Repeatedly pressing the ▷ button displays the sources in the following order:

Display	What it means
_ _ _ _ _ _	Plays from whichever source was used just before turning off the system
TUNER	Plays FM or AM broadcast
TUNER TIMER REC	Records FM or AM broadcast
CD	Plays a CD
TAPE	Plays a tape
_ _ _ _ TIMER REC	Records from whichever source was used just before turning off the system

Note:
- If you choose an FM or AM radio station as the source, select the preset station by pressing the PRESET button on the Tuner.

2. **Press the MEMORY button.**
   This stores the source to play or record in memory.

Setting the Volume

1. **Press the TUNING/TIMER/DIMMER button to select a volume level.**
   Repeatedly pressing the ▷ button displays the volume levels in the following order:

Display	What It Means
VOL - - - -	Volume set to the level used before shut the power off.
VOL - - 0	Volume off
VOL - - A	Volume barely on
VOL - - B	Volume at 1/4 power
VOL - - C	Volume at 1/3 power

2. **Press the MEMORY button.**
   This stores the volume level for timed playback or recording in memory.

Starting the Timer

Press the Timer button to start the timer. The timer you chose should light on the display.

Note:
- If the timer light does not light, the timer was not set properly, and you need to set the start time again.

To change your selection, press the CANCEL button and enter a new value.

Turning the System Off

Press the POWER button on the Amplifier to turn the system off.

- The system is now programmed to turn on at the preset start-time, and play or record until the stop-time.
- It will record or play the preset source at the preset volume level until the stop-time is reached.
- If you turn the system on before the start-time, the timer will still operate as programmed at the start-time.

Resetting the Timers

To reset a timer, press the button (TIMER1, TIMER2, or DAILY) on the Tuner twice. Now the timer is set again and will use the same start-time, stop-time, source, and volume level as before.

Setting the Wake-Up and Sleep Timer

You can set a timer so it turns on to wake you up or turns off when you go to sleep.

Setting the Wake-Up Timer

The wake-up timer serves as an alarm clock. It turns the system on after a programmed time lapse and plays the source that was used before the system was turned off. You can set a wake-up time from between 5 minutes and 12 hours.

1. **Press the POWER switch on the Amplifier so it is off.**
2. **Press the WAKE UP/SLEEP button on the Tuner.**
   This tells the system that you are going to set the wake-up time.

3. **Press the WAKE UP/SLEEP button repeatedly until the desired wake-up time appears.**

   Each time you press the WAKE UP/SLEEP button, the wake-up time lapse changes in the following order:

   →0:05→0:10→0:15→0:30→0:45→1:00→1:30→2:00→3:00→(every hour) →12:00→(back to the beginning)

   - If you make a mistake, press the CANCEL button on the Tuner and enter a new wake-up time with the WAKE UP/SLEEP button.

   The system will now turn on after this time lapse.

   - The wake-up timer has priority over TIMER1, TIMER2, and the DAILY timer.
     This means that if the start-time for one of the timers occurs before the wake-up time, the system will wait until the wake-up time to turn on.

Note:
- If CD is the source that will be used, playback begins with the first track.

Setting the Sleep Timer

The sleep timer is used to turn off the system after a specified time lapse. With this timer you can fall asleep listening to music, knowing that the system will shut off automatically and not stay on all night. You can set the sleep timer to turn the system off from between 5 minutes and 2 hours.

1. **Press the POWER switch on the Amplifier so it is on.**
2. **Starts the source you want to listen to.**
3. **Press the WAKE UP/SLEEP button on the Tuner.**

This tells the system that you are going to set the sleep time.

4. **Press the WAKE UP/SLEEP button repeatedly until the desired sleep time appears.**

Each time you press the WAKE UP/SLEEP button, the sleep time lapse changes in the following order:

→ 0:05→ 0:10→ 0:15→ 0:30→ 0:45→ 1:00→ 1:15→ 1:30→ 1:45→ 2:00 → (back to the beginning)

- If you make a mistake, press the CANCEL button on the Tuner and enter a new sleep time with the WAKE UP/SLEEP button.

The system will now turn off after this time lapse.

- The sleep timer has priority over TIMER1, TIMER2, and the DAILY timer.

This means that if the stop-time for one of the timers occurs before the sleep time, the system will wait until the sleep time before turning itself off.

Checking the Remaining Time

After setting the wake-up or sleep timer, you can check the time remaining until the system turns on (wake-up time) or shuts off (sleep time).

Press the WAKE UP/SLEEP button.

The remaining time is displayed for 5 seconds. Then the clock time appears again.

Adding More Time

If you want more time before the wake-up timer turns the system on (or the sleep timer turns the system off), follow these steps:

1. **Press the WAKE UP/SLEEP button.**
   The remaining time is displayed for 5 seconds. Then the clock time appears again.
2. **Press the WAKE UP/SLEEP button again before the clock time is displayed.**

- Keep pressing this button until the desired additional time is reached.

Now the system will wait until the added amount of time until turning on or shutting off.

Cancelling the Time Setting

If you decide you don't want the system to wake you up or play music while you fall asleep, you can turn these timers off.

1. **To cancel the wake-up timer, press the POWER button on the Amplifier.**

This turns the power on.

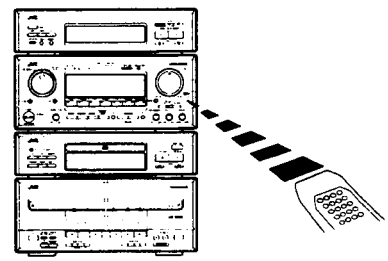
2. **To cancel the sleep timer, press the POWER button on the Amplifier.**

This turns the power off.

Using the Remote Controller

Operating the Remote Controller

You can use the Remote Controller to operate the system without leaving your chair. You can use it up to a distance of 23 feet.

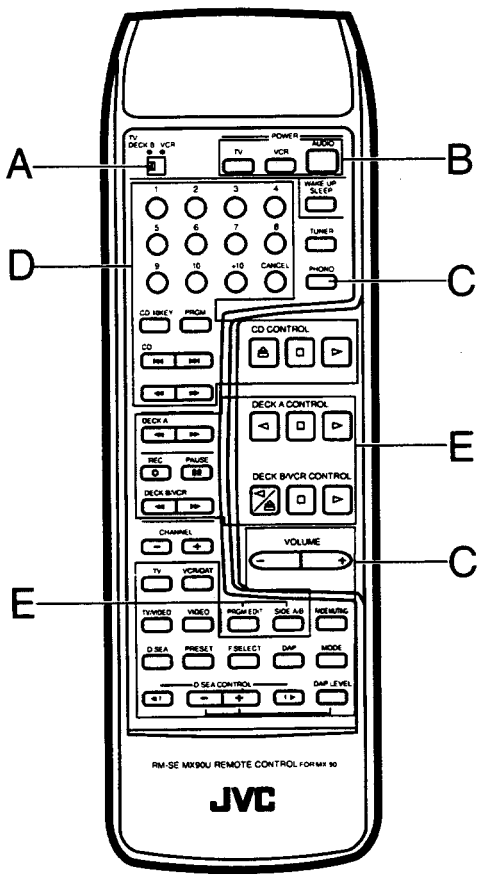


Point the Remote Controller at the remote sensor on the Amplifier.

Note:
- When the Tuner is selected as the source, and Cd OFF is displayed, only the OPEN/CLOSE and PLAY buttons on the Remote Controller can be used.

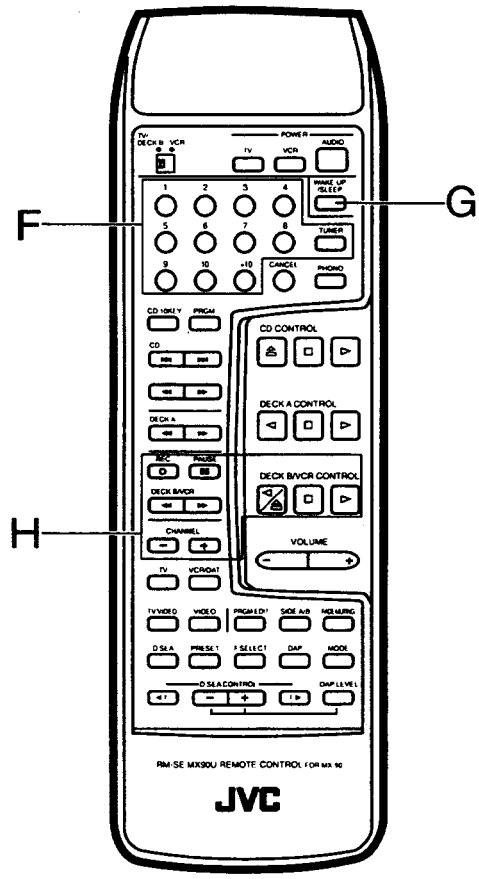
To use other buttons on the Remote Controller (for programming and other operations), press the CD button on the Amplifier or the CD PLAY button on the Remote Controller first.

When using the TV/deck B, set switch **A** to TV/DECK B. When using the VCR, set the switch to VCR.



Function	Button (s) To Use
B Turn on the main unit	
Turn on the TV	
Turn on the VCR	
C Amplifier	
Adjust volume level	VOLUME
Gradually reduce the volume to zero (If you press it again, the volume will return to roughly what it was before.)	
Set the SOURCE SELECTOR of the amplifier to PHONO	
Set the SOURCE SELECTOR of the amplifier to VCR/DAT	
Set the SOURCE SELECTOR of the amplifier to TV	
Change the TV input (TV, VIDEO 1, VIDEO 2)	
Set the SOURCE SELECTOR of the amplifier to VIDEO/VDP	
Turning D.SEA Function on or off	
Using a D.SEA pattern	
FREQUENCY SELECT	
FREQUENCY ◄, ►	,
Setting a D.SEA level	
Turning DAP/DSEP Function on or off	
Using a DAP/DSEP pattern	
Setting a DAP/DSEP level	+
D CD Player	
Open and close the disk tray	
Play a CD	
Stop playback of a CD	
Place numeric keys in CD mode	
Select track number	~
Scanning through the track number	
Search for a certain part of the track	
Program playback order	

Note: Where '+' is indicated, press and hold the first button illustrated, then press the second.



Function	Button (s) To Use

E Tape Deck

(Press buttons corresponding to the deck being used, either deck A or B)

- Play a tape in forward direction
- Play a tape in reverse direction
- Stop playback temporarily (deck B)
- Stop playback
- Fast forwarding or fast rewinding
- Search for beginning of the track while in forward direction
- Search for beginning of the track while in reverse direction
- Recording in forward direction
- Recording in reverse direction
- Pausing recording
- Stopping recording
- Recording from CD in the Programmed-Edit mode

F Tuner

- Selecting Tuner mode
- Selecting a preset station

G Timers

- Setting the wake-up/sleep timer

H VCR

- Recording
- Play a tape
- Stop playback
- Stop recording or playback temporarily
- Rewind the tape
- Fast forwarding
- Select a TV channel
- Eject the videocassette

• When using the remote controller to operate a VCR, point the controller at the VCR.

TV

- Select a TV channel

Troubleshooting

Symptom	Possible Cause	Action
No sound is heard.	Speakers are connected incorrectly.	Re-connect speakers (see "Connecting the System Component" on page 6).
	Is MIXING LEVEL set to MIC?	Set MIXING LEVEL to SOURCE.
Impossible to record.	Tape tabs are broken out.	Cover tabs with adhesive tape.
Interference during broadcast.	Antenna is disconnected.	Re-connect the antenna securely.
	The loop antenna is too close to the system.	Change the position and direction of the loop antenna.
CD sound is discontinuous.	The CD is scratched or stained.	Clean or replace the CD.
The Remote Controller cannot be operated.	There is an obstruction blocking the remote sensor on the amplifier.	Remove the obstruction.
	The batteries of the Remote Controller are weak.	Replace the batteries.
The CD disc tray cannot be operated.	Are the power cord and the system connector unplugged?	Plug the power cord and the system connector in prooerly.
The CD does not play.	The CD is in the tray upside down.	Put the CD in the tray with the label side facing up.
Operations are disabled.	The built-in microprocessor may malfunction due to external electrical interference.	Unplug the system, then plug it back in.
The casette holder cannot be opened.	The system was turned off because the timer was operated while the tape was running.	Turn on the system.

Specifications

Amplifier

AUDIO SECTION

SOURCE DIRECT SW ON	
Output Power	
SPEAKERS A (Main)	**45 watts per channel (Main: 21 watts per channel, min. RMS, both channels driven into 8 ohms, from 200 Hz to 20 kHz, with no more then 0.9% total harmonic distortion.**
SPEAKERS B (Bubwoofer)	**24 watts per channel, min. RMS, both channels driven into 6 ohms, from 20 Hz to 200 Hz, with no more than 0.9% total harmonic distortion.**
REAR SPEAKERS	10 watts per channel, min. RMS, both channels driven into 16 ohms, at 1kHz.
Total Harmonic Distortion at Half-Rated)Power	0.07%
Input Sensitivity/ Impedance (1 kHz)	
VCR/DAT, VIDEO/VDP, TV	200mV/47k ohms
PHONO	3mV/47k ohms
MIC	2mV/10k ohms
D. SEA Center Frequencies	63, 86, 117, 160, 218, 296, 400, 544, 740, 1k,1.36k, 1.85k, 2.5k, 3.4k, 4.63k, 6.3k, 8.56k, 11.7k, 16kHz
D. SEA Control Range	± 12dB

VIDEO SECTION

MONITOR VCR-	
OUTPUT LEVEL	1Vp-p
IMPEDANCE	75 ohms
VCR, VIDEO/VDP	
INPUT LEVEL	1Vp-p
IMPEDANCE	75 ohms
Dimensions (W x H x D)	10-7/8 x 4-9/16 x 11-1/2 inches (275 x 115 x 294 mm)
Weight	10.9 lbs (5.3 kg)

Compact Disc Player

Dynamic Range	90dB
Signal-to-Noise Ratio	100dB
Wow and Flutter	Unmeasurable
Dimensions (W x H x D)	10-7/8 x 2-11/16 x 10-7/16 inches (275 x 68 x 265 mm)
Weight	4.5 lbs (2.0 kg)

Tape Deck

Frequency response	
Metal:	30 — 17,000Hz
CrO_2:	30 — 16,000Hz
Normal:	30 — 15,000Hz
Wow and Flutter (WRMS)	0.09%
Dimensions (W x H x D)	10-7/8 x 4-9/16 x 10-1/2 inches (275 x 115 x 266 mm)
Weight	6.2 lbs (2.8 kg)

Tuner

FM

Tuning range	87.5 MHz — 108.0 MHz
Usable Sensitivity	0.95µV/75 ohms (10.8dBf)
Signal-to-Noise Ratio (IHF-A Weight)	
MONO	80dB
STEREO	73dB

AM Tuner

Tuning range

MW	
U.S.A. and Canada	530 kHz ~ 1710 kHz
U.K., Continental Europe and Australia	522 kHz ~ 1629 kHz
Other area	531 kHz ~ 1602 kHz 530 kHz ~ 1600 kHz
LW	144 kHz ~ 353 kHz

Accessories

FM Feeder antenna	1
AM Loop antenna	1
Speaker cable	2
Remote Controller (RM-SEMX90U)	1
Batteries (UM-4/AAA/R03)	2

Design and specifications subject to change without notice.

POWER SPECIFICATIONS

Canada	AC 120 V ∿, 60 Hz	190 watts, 295VA
Continental Europe	AC 230 V ∿, 50 Hz	180 watts
U. K	AC 240 V ∿, 50 Hz	390 watts
Australia		
Other areas	AC 110-127/220-240 V ∿, selectable, 50/60 Hz	195 watts